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| Project                      | <b>IEEE 802.16 Broadband Wireless Access Working Group</b> < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >  |   |
| Title                        | <b>Fix Improper SS/MS Changes in 6.3.2.3.26 DREG-CMD message</b>  |   |
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| Re:                          | Fix Improper SS/MS Changes in 6.3.2.3.26 DREG-CMD message   |   |
| Abstract                     | Current proposed language changes in 802.16e/D9 to 6.3.2.3.26 DREG-CMD messages breaks backwards compatibility, is out-of-scope of the 16e PAR  |   |
| Purpose                      | Provide remedy to fix identified problems to bring document back into conformance with the 16e PAR while preserving the added functionality   |   |
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## Fix Improper SS/MS Changes in 6.3.2.3.26 DREG-CMD message

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### **Problem:**

Again, inappropriate SS to MS changes from the 802.16-2004 documents that would remove necessary specification for 802.16-2004 compliant SS breaking backwards compatibility thus is out-of-scope of the 16e PAR.

Simple remedy is to change the MS back to SS where appropriate in the Table. This MUST be fixed.

Also, in Action Code 2 actions, correcting improper Action Code response to resume Normal Operation specified. Says '0x00' but should be '02 or 03'.

[Phil Barber: 2005-6-10] Based on comments received from Ori Zivan, clarify language in 0x7 so that it is clear that a subsequent DREG-CMD that includes Code 0x3 will end the restriction of 0x7.

[Phil Barber: 2005-7-14] Fix D9 Accepted-Modified remedy horrible mangling of this section.

### **Remedy:**

[In 6.3.2.3.26 De/Re-register command (DREG-CMD) message, page 58, line 42 through page 61, line 14; **replace entire subsection in the D9 document**, including editorial instruction, as:]  
**6.3.2.3.26 De/Re-register command (DREG-CMD) message**

*[Change the text before Table 54 as indicated:]*

The DREG-CMD message shall be transmitted by the BS on an SS's Basic CID to force the SS to change its access state. The BS may transmit the DREG-CMD unsolicited or in response to an SS DREG-REQ message. Upon receiving a DREG-CMD, the SS shall take the action indicated by the action code.

In IDLE Mode operation, the DREG-CMD message may be sent to an MS in an unsolicited manner. When the BS transmits the an unsolicited DREG-CMD with Action Code = 0x05 to an MS, the BS shall start T46 timer at the same time. If the BS does not receive the DREG-REQ message from MS in response to the unsolicited DREG-CMD message within T46 timer expiry, the BS shall retransmit the DREG-CMD message in an unsolicited manner as long as DREG Command Retry Count has not been exhausted. If DREG Command Retry Count is exhausted, the BS shall cease all attempts to initiate IDLE Mode operation for the MS.

The MAC Management Message Type for this message is given in Table 14. The format of the message is shown in Table 54.

*[Change Table 55 as indicated:]*

Table 55—Action codes and actions

| Action Code<br>(hexadecimal) | Action |
|------------------------------|--------|
|                              |        |

|                  |   |
|------------------|---|
| 00               | SS shall <del>leave the current channel and attempt to access another channel</del> immediately terminate service with the BS and should attempt network entry at another BS                |
| 01               | SS shall listen to the current <del>channel</del> BS but shall not transmit until an RES-CMD message or DREG_CMD with Action Code <del>that allows transmission</del> 02 or 03 is received. |
| 02               | SS shall listen to the current <del>channel</del> BS but only transmit on the Basic, <del>and</del> Primary Management, <del>and</del> Secondary Management Connections.                    |
| 03               | SS shall return to normal operation and may transmit on any of its active connections.  |
| 04               | SS shall terminate current Normal Operations with the BS; the BS shall transmit this action code only in response to any SS DREG-REQ message.   |
| <u>05</u>        | <u>MS shall immediately begin de-registration from serving BS and request initiation of MS Idle Mode</u>  |
| <u>06</u>        | <u>The MS may retransmit the DREG-REQ message after the time duration (REQ-duration) provided in the message</u>  |
| <u>07</u>        | <u>The MS shall not retransmit the DREG-REQ message and shall wait the DREG-CMD message. BS transmittal of a subsequent DREG-CMD with Action Code 03 shall cancel this restriction.</u>     |
| <u>0x0508-FF</u> | <i>Reserved</i>   |

[Insert the following text after Table 55 as indicated:]

When the DREG-CMD message is sent with Action Code = 0x05, the following TLVs shall be included:

#### **Paging Information (see 11.14)**

The Paging Information TLV defines the Paging Group ID and the PAGING\_CYCLE and PAGING OFFSET parameters to be used by the MS in IDLE mode

#### **Paging Controller ID**

The Paging Controller ID is a logical network identifier for the serving BS or other network entity retaining MS service and operational information and/or administering paging activity for the MS while in IDLE Model. Paging Controller ID shall be set to BSID when a BS is acting as Paging Controller.

#### **Idle Mode Retain Information**

Idle Mode Retain Information provided as part of this message is indicative only. Network Re-entry from Idle Mode process requirements may change at time of actual re-entry. For each bit location, a value of 0 indicates the information for the associated re-entry management messages shall not be retained and managed, a value of 1 indicates the information for the associated re-entry management message shall be retained and managed.

Bit #0: Retain MS service and operational information associated with SBC-REQ/RSP messages

Bit #1: Retain MS service and operational information associated with PKM-REQ/RSP messages

Bit #2: Retain MS service and operational information associated with REG-REQ/RSP messages

Bit #3: Retain MS service and operational information associated with Network Address

Bit #4: Retain MS service and operational information associated with Time of Day

Bit #5: Retain MS service and operational information associated with TFTP message s

Bit #6: Retain MS service and operation information associated with Full service (MAC state machines, CS classifier information, etc.). The information retained by setting Bit #6 does not include those information associated with SBC-REQ/RSP messages, PKM-REQ/RSP messages, REG-REQ/RSP messages, Network Address, Time of Day, and TFTP messages unless otherwise specified by setting one or more Bits #0-#5.

Bit #7: Consider Paging Preference of each Service Flow in resource retention. Bit #7 is meaningful when Bit #2 and Bit #6 have a value of 1. If Bit #2, Bit #6 and Bit #7 is 1, MS service and operational information associated with Full service (MAC state machines, CS classifier information, etc) are retained for Service Flows with positive Paging Preference. If Bit #2 and Bit #6 are 1 and Bit #7 is 0, MS service and operational information associated with Full service (MAC state machines, CS classifier information, etc) are retained for all Service Flows.

When the DREG-CMD is sent with Action Code = 0x05, the following TLVs may be included:

#### **MAC Hash Skip Threshold**

Maximum number of successive MOB\_PAG-ADV messages that may be sent from a BS without individual notification for an MS, including MAC Address hash of an MS for which Action Code is 00, 'No Action Required'. If BS does not include this TLV item in the DREG-CMD message, any BS may omit MAC Address hash of the MS with 'No Action Required' for any MOB\_PAG-ADV messages.

The DREG-CMD message may include the following parameters encoded as TLV tuples:

#### **REQ-duration**

Waiting value for the DREG-REQ message re-transmission (measured in frames) If serving BS includes REQ-duration in a message including an Action Code = 0x05, the MS may initiate an Idle Mode request through a DREG-REQ with Action Code = 0x01, request for MS De-Registration from serving BS and initiation of MS Idle Mode, at REQ-duration expiration.